

THE TAXONOMIC STATUS OF *Cronia fiscella* (GMELIN,
1791) AND *C.margariticola* (BRODERIP,1833)
(GASTROPODA: MURICIDAE)

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Abstract. The identity of the related muricid taxa *Cronia fiscella* (Gmelin), *C.margariticola* (Broderip) and its sub-species *crassulnata* (Hedley), is evaluated on the basis of type-specimens, type-figures, original descriptions and usage by previous authors.

In a recent paper dealing with the taxa *Cronia fiscella* (Gmelin) and *C.margariticola* (Broderip), Emerson & D'Attilio (1981) applied these two epithets to species which are different to those originally described and are contrary to current usage in malacological literature. It is taxonomically undesirable and confusing to have different names for the same taxon in literature, and a review of these taxa has been undertaken in order to arrive at a nomenclature compatible with the intentions of the original author, the history of past usage and acceptability of the majority of malacological taxonomists.

Synonymies of usage have been compiled and these are listed first, followed by a discussion on the history of the pertinent taxa and the treatment accorded to the 3 taxonomic units by past authors.

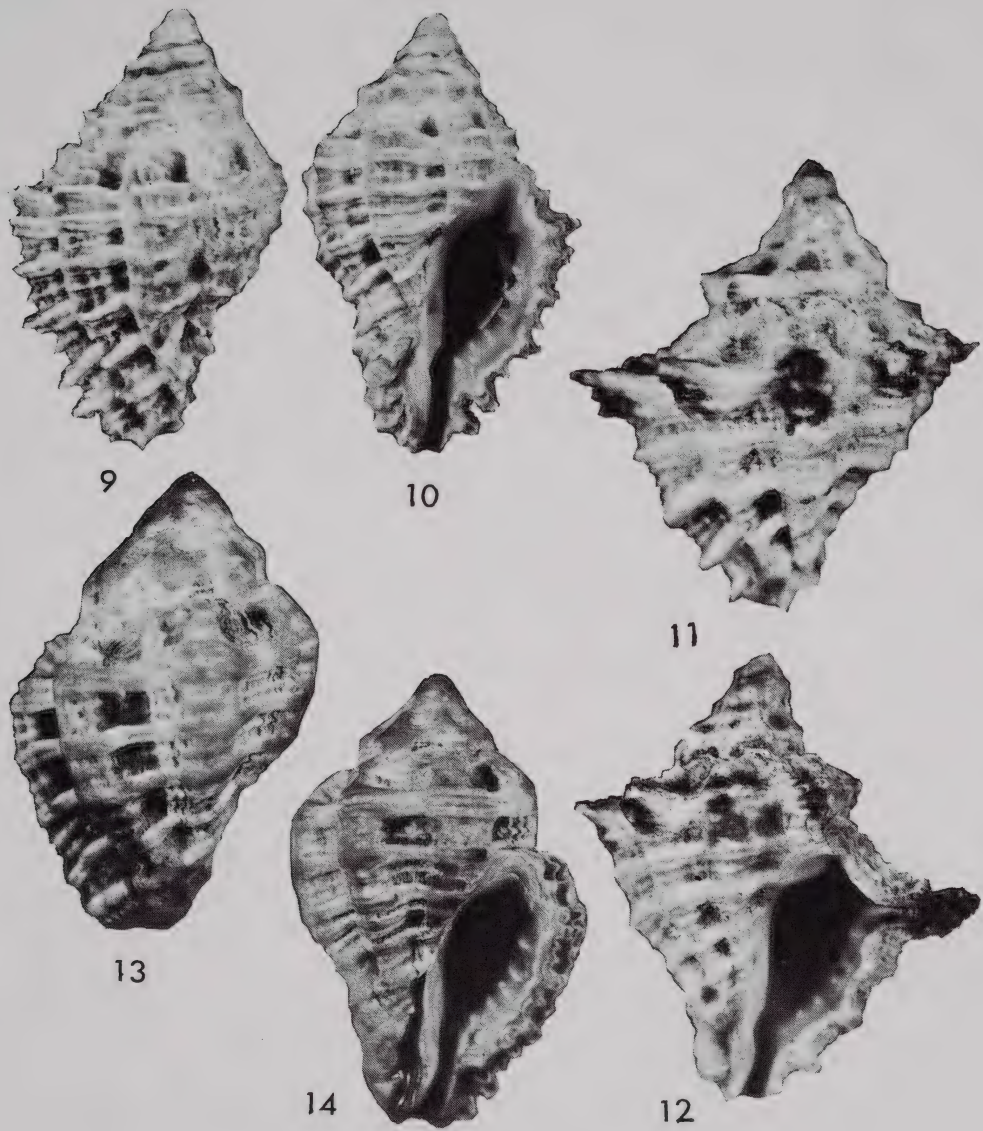
Cronia fiscella (Gmelin, 1791)

(Figs. 1-14)

1788. "*Murex fiscellum*" Chemnitz, Neues syst.Conchyl.-Cab. 10:242,pl.160, figs.1524,1525 (non binom.).
1791. *Murex fiscellum* Gmelin, Syst.Nat. ed.13:3552 (ref.Chemnitz, op.cit., pl.160, figs.1524,1525).
1817. *Murex fiscellum* Dillwyn, Desc.cat.Rec.shells 2:731 (ref.Martyn,Univ. Conch.,pl.93 ?).
1822. *Purpura fiscella* Lamarck, Hist.nat.anim.s.vert. 7:246 (ref.Chemnitz, op.cit., pl.160,figs.1524,1525).
1828. *Murex funiculus* Wood, Suppl.Index Test. p.15,pl.5,fig.17.
1833. *Murex ricinuloides* Quoy & Gaimard, Voy.L'Astrolabe,Zool. 2:534,pl.36, figs.13,14 (shell); fig.15 (animal); fig.16 (operculum); 1880 Tapparone-Canefri, Ann.Soc. Malac.Belg. 15(1):22; 1901 Fischer, J.Conchyl. 49(2): 105; 1906 Dautzenberg & Fischer, J.Conchyl. 53(4):396; 1971 E.Vokes, Bull.Americ.Paleont.61(268):91.
1834. *Murex iostoma* Sowerby, Conch.Illust. pt.64:fig.42; 1971 E.Vokes, Bull. Americ.Paleont. 61(268):61.
1841. *Murex fiscellum* Sowerby, Conch.Illust., text to *Murex* (ref.to *M.iostoma* Sowerby, fig.42).
1845. *Murex fiscellum* Chemnitz, Reeve, Conch.Iconica 3:pl.27,fig.124.
1845. *Murex decussatus* Reeve, Conch.Iconica 3:pl.31,fig.153 (non Gmelin,1791).
1852. *Purpura pothuanii* Eydoux & Souleyet in Vaillant, Voy."Bonité",Zool. 2:605, pl.39,figs.30,31.



Figs. 1-8. *Cronia fiscella* (Gmelin). 1,2. Illustrated lectotype (from Chemnitz, 1788, figs.1524,1525). 3,4. Specimen of "*Murex fiscellum* Dillwyn" (from Martyn, 1784-86, pl.93 ?). 5. Illustrated lectotype of *Murex funiculus* Wood (from Wood, 1828, fig.17). 6. Type figure of *M.ricinuloides* Quoy & Gaimard (from Quoy & Gaimard, 1833, fig.13). 7. Illustrated lectotype of *M.iostoma* Sowerby (from Sowerby, 1834, fig.42). 8. Illustrated lectotype of *M.decussatus* Reeve (from Reeve, 1845, fig.153).



Figs. 9-14. *Cronia fiscella* (Gmelin). 9,10. Reeve's specimen of *Murex fiscellum*; BM(NH), 31.2 mm. 11,12. Holotype of *Purpura stellaris* Hombron & Jacquinot in Rousseau; MNHNP, immature spec., 15.8 mm. 13,14. Lectotype of *P.pothuanii* Eydoux & Souleyet in Vaillant; MNHNP, 19.6 mm.

1853. *Purpura muricoides* Hombron & Jacquinot in Rousseau, Voy.Pole Sud 5:87, Atlas pl.22, figs.11,12 (non Blainville,1832).
1853. *Purpura stellaris* Hombron & Jacquinot in Rousseau, Voy.Pole Sud 5:88, Atlas pl.22, figs.13,14.
1864. *Coralliophila confragosa* H. & A.Adams, Proc.Zool.Soc.Lond. for 1863:432.
1868. *Sistrum triangulatum* Pease, Americ.J.Conch.3:278,pl.23,fig.15.
1869. *Murex fiscellum* Chemnitz, Kobelt, Martini-Chemnitz syst.Conch.-Cab. ed.2, 3(2):95,pl.33,figs.10,11.
1880. *Ricinula(Sistrum)fiscellum* Chem.,Tryon, Man.Conch. 2:188,pl.58, figs.251-257.
1899. *Sistrum fiscellum* Chemnitz, Hedley, Mem.Austral.Mus. 3(7):461 (ref. Tryon, 1880,pl.58,figs.251-257).
1911. *Sistrum(Morula)fiscellum* Chemnitz, Schepman, Siboga-Exped. 49d:357 (ref. Reeve,1845,pl.27,fig.124 and Tryon,1880,pl.58,figs.251-257).
1929. *Ricinula(Sistrum)fiscellum* Chemnitz, Dautzenberg, Faune Colon.Francaises p.226 (ref.Chemnitz,op.cit., pl.160,figs.1524,1525 and Tryon, 1880,pl.58,fig.252).
1935. *Morula fiscellum* (Chemnitz),Ostergaard, Bern.P.Bishop Mus.Bull. 131:37 (ref.Kobelt,1869,pl.33,figs.10,11 and Tryon,1880,pl.58,figs.251-257).
1952. *Morula fiscellum* (Chemnitz), Tinker, Pacific sea-shells p.92, facing pl., figs.top row.
1957. *Morula fiscella* Gmelin, Kaicher, Indo-Pacific sea-shells pl.3,fig.14.
1957. *Morula triangulata* Pease, Kaicher, *ibid.* pl.3,fig.7.
1957. *Morula triangulatum* (Pease), Demond, Pacific Science 11(3):312, textfig.20.
1957. *Morula fiscella* Gmelin, Demond, *ibid.* 11(3):312 (ref.Tinker,1952,pl. on p.93,figs.top row).
1966. *Morula fiscella* (Gmelin), Habe & Kosuge, Shells world col. 2:55,pl.20, fig.11.
1969. *Morula (Cronia)fiscella* (Gmelin), Cernohorsky, Veliger 11(4):311,pl.49, fig.25 (shell), fig.19 (radula).
1972. *Morula fiscella* (Gmelin), Cernohorsky, Marine shells Pacific 2:128, pl.36,fig.7; 1978 Cernohorsky, Bull.R.Soc.New Zealand 17:45.
1974. *Morula fiscella* Quirk & Wolfe, Seashells Hawaii p.10,fig.11.
1978. *Morula fiscella* (Gmelin), Hinton, Guide Austral.shells pl.38,figs.14,14a; 1978 Hinton, Guide shells Papua New Guinea pl.30,fig.13.
1978. *Morula triangulata* (Pease), Hinton, Guide Austral.shells pl.38,figs.15,15a.
1978. *Cronia triangulata* (Pease), Cernohorsky, Trop.Pacific mar.shells p.70, pl.20,fig.6.
1979. *Muricodrupa funiculus* (Wood), Kay, Hawaiian Mar.shells p.238,fig.831.
1980. *Morula fiscella* (Gmelin), Kohn, "Micronesica", J.Univ.Guam 16(2):221.
1980. *Morula triangulata* (Pease), Zipser & Vermeij, "Micronesica", J.Univ. Guam 16(2):230.
1981. *Muricodrupa funiculus* (Wood), Emerson & D'Attilio, Nautilus 95(2):80, figs.6a,b (radula), figs.8a,b (operculum).

TYPE LOCALITY. Pulo Condore I, near China (*fiscellum*); none (*funiculus*; *iostoma*; *confragosa*); Tongatabu, Tonga Is (*ricinuloides*); Manila, Philippines (*pothuanii*); Solomon Is (*stellaris*); Hogoleu I [= Truk I, Caroline Is] (*muricoides*); Hawaiian Is (*triangulatum*); Bohol, Philippines (*decussatus*).

***Cronia margariticola margariticola* (Broderip,1833) (Figs. 15-18)**

1795. "*Murex undatus*" Chemnitz, Neues syst.Conch.-Cab. 11:124,pl.192, figs.1851,1852 (non binom.).
1817. *Murex undatus* Dillwyn, Desc.cat.Rec.shells 2:732 (ref. Chemnitz,op.cit., pl. 192,figs.1851,1852 (non Gmelin,1791)).
1832. *Purpura fiscella* Lam.,Blainville, Nouv. Ann.Mus.d'Hist.Nat.Paris 1:206, pl.10,fig.8 (non *Murex fiscellum* Gmelin,1791).
1832. *Purpura squamosa* Deshayes in Belanger, Voy.Indes-Orient. p.427,pl.2, figs.6-8 (non Lamarck,1816).

1833. ? *Purpura thiarella* Lamarck, Quoy & Gaimard, Voy.L'Astrolabe, Zool. 2:571, pl.39,fig.6 (shell), fig.4(animal),fig.5 (operculum).
1833. *Murex margariticola* Broderip, Proc.Zool.Soc.Lond. Pt.2:177 (publ. 14 January 1833).
1834. *Murex margariticola* Brod., Sowerby, Conch.Illust. Pt.60: fig.21.
1835. *Purpura fiscella* Lam., Kiener, Spec.gen.icon.coq.viv. 8:30,pl.6,fig.12.
1844. *Purpura squamulosa* Deshayes in Deshayes & Edwards, Hist.nat.anim.s.vert. ed.2, 10:104 (nom.subst.pro *P.squamosa* Deshayes in Belanger,1832 (non *P.squamulosa* Gray,1839).
1845. *Murex margariticola* Brod., Reeve, Conch.Iconica 3:pl.34,sp.178.
1862. *Ricinula fiscellum* Chemnitz, Küster, Martini-Chemnitz syst.Conch.-Cab. ed.2, 3(1e):20,pl.4,fig.1.
1870. *Murex undatus* Chemnitz, Kobelt, *ibid.*, 3(2):121,pl.36,figs.7,8.
1879. *Sistrum undatum* Chemnitz, E.A.Smith,Proc.Zool.Soc.Lond. p.213 (ref. Chemnitz, op.cit., pl.192, figs.1851,1852).
1880. *Ricinula (Sistrum)undata* Chemnitz, Tryon, Man.Conch. 2:189,pl.59,figs.260,262,263 only; 1929 Dautzenberg, Faune Colon.Francaises p.435; 1932 Dautzenberg, J.Conchyl. 76:42.
1891. *Pentadactylus undatus* Chemnitz, P.Fischer, Soc.Hist.Nat.Autun p.149.
1905. *Sistrum undatum* Chemnitz, Dautzenberg & Fischer, J.Conchyl. 53(2):122; 1906 Dautzenberg & Fischer, J.Conchyl. 53(4):395.
1910. ? *Ricinula(Sistrum)undata* var.*albovaria* Küster, Dautzenberg, J.Conchyl. 58:27.
1911. *Sistrum(Morula)undata* Chemnitz, Schepman, Siboga-Exped. 49d:357 (ref. Chemnitz, op.cit., pl.192,figs.1851,1852).
1916. *Drupa margariticola* Brod., Hedley, J.R.Soc.West Australia 1:65 (ref. Reeve, 1845, pl.34,sp.178).
1938. *Drupa(Morula)margariticola* (Broderip), Adam & Leloup, Mem.Mus.R.d'Hist. Nat.Belg. 2(19):161,pl.6,fig.16.
1957. *Morula undata* Lamarck, Kaicher, Indo-Pacific sea-shells, pl.4,fig.2.
1959. *Drupa(Cronia)margariticola* Brod.,Barnard, Ann.Sth.African Mus. 45(1):229, fig.50c (radula) (ref.Chemnitz, op.cit.,pl.192,figs.1851,1852).
1967. *Cronia margariticola* (Brod.),Habe & Kosuge, Stand.Cat.Jap.shells col. 3:69,pl.27,fig.7.
1967. *Drupa(Morula)fiscella* (Gmelin),Orr-Maes, Proc.Acad.Nat.Sci.Philadelphia 119 (4):130,pl.11,fig.H.
1969. *Morula(Cronia)margariticola* (Broderip),Cernohorsky, Veliger 11(4):312,pl.49,fig.26 (shell), figs.20a,b (radula); 1977 Cernohorsky, Bull.R. Soc.New Zealand 17:45.
1975. *Morula margariticola* (Brod.), Oliver, Shells world p.180,fig.left, 1975 Salvat & Rives, Coq.Polynésie p.317,fig.216; 1978 Hinton, Guide shells Papua New Guinea pl.30,figs.9,9a.
1981. *Cronia fiscella* (Gmelin), Emerson & D'Attilio, Nautilus 95(2):81,fig.9 (figd. lectotype of *Murex margariticola* Broderip).

TYPE LOCALITY. Coasts of Tranquebar, India (*undatus*); west coast of India (*squamosa* and *squamulosa*); Lord Hood's I, Pacific Ocean [= Marutea I, Gambier Is, French Polynesia] (*margariticola*).

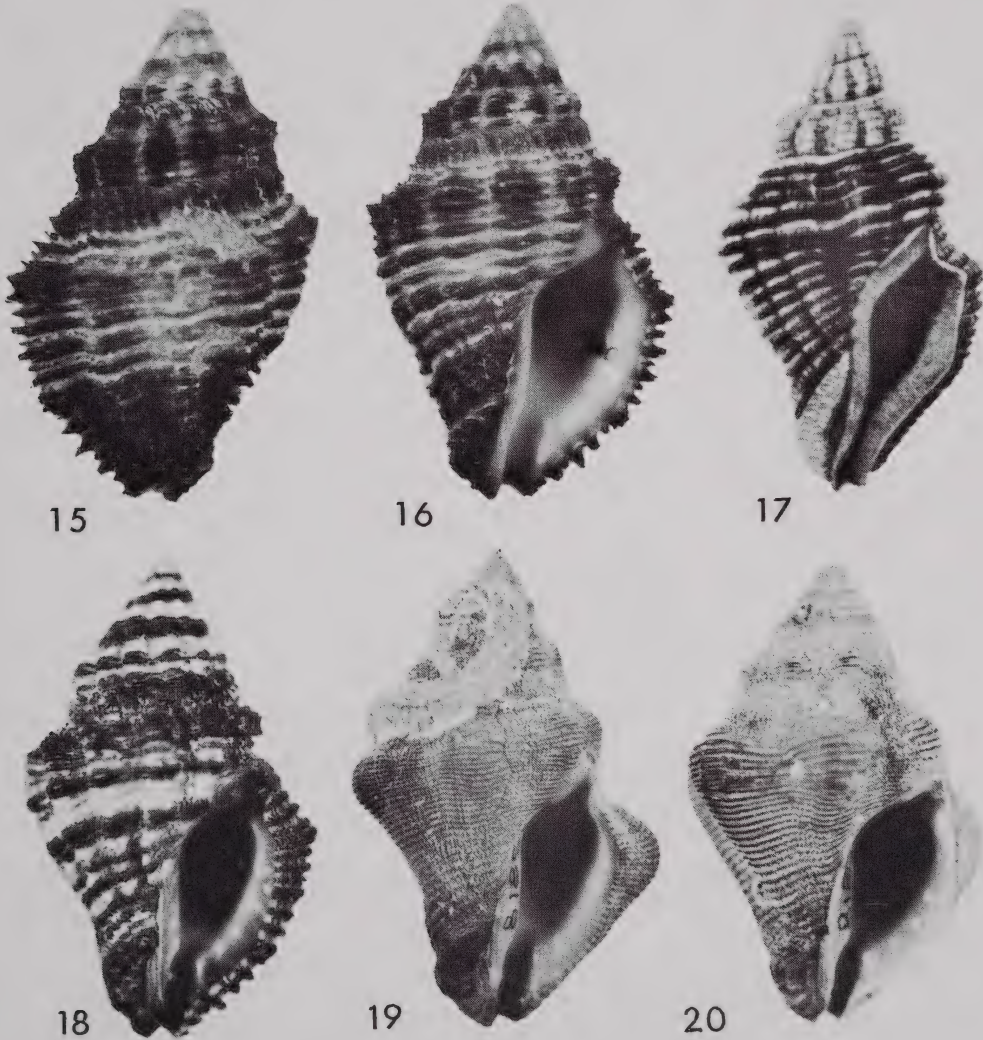
***Cronia margariticola crassulnata* (Hedley,1915)**

(Figs. 19,20)

1846. *Ricinula fiscellum* Chemnitz, Reeve, Conch.Iconica 3:pl.4,fig.28 (non *Murex fiscellum* Gmelin,1791).
1853. *Purpura fiscella* var.(pars) Hombron & Jacquinot in Rousseau, Voy.Pole Sud, Atlas pl.22,figs.19,20 only.
1884. *Sistrum undatum* var. E.A.Smith, Rept.Zool.coll.voy.H.M.S."Alert", p.51 (ref. to *Ricinula fiscellum* Reeve,1846, pl.4,fig.28).
1880. *Ricinula(Sistrum)undata* Chemnitz (pars),Tryon,Man.Conch. 2:189,pl.59, fig.259 only.
1915. *Thais crassulnata* Hedley, Proc.Linn.Soc.N.S.W. 39(4):749,pl.85,fig.90.

1923. *Morula rhyssa* Dall, Proc.Acad.Nat.Sci.Philadelphia 75:304 (nom.subst. pro *Ricinula fiscella* Reeve, 1846, pl.4,fig.28).
 1971. *Morula margariticola* Broderip, Wilson & Gillett, Australian shells p.92, pl.61,fig.9.
 1978. *Cronia crassulnata* (Hedley),Cernohorsky, Trop.Pacific mar.shells p.69, pl.20,fig.6.

TYPE LOCALITY. Sweers I, Gulf of Carpentaria, Nth.Australia (*crassulnata*); Australia (*rhyssa*).



Figs. 15-20. *Cronia margariticola margariticola* (Broderip). 15,16. Lectotype BM(NH) No.1981146, 25.3 mm. 17. Type figure of *Purpura squamosa* Deshayes in Bélanger and *P.squamulosa* Deshayes in Deshayes & Edwards (from Deshayes in Bélanger, 1832, fig.6). 18. Specimen from Viti Levu Bay, Fiji Is; 23.2 mm. 19,20. *Cronia margariticola crassulnata* (Hedley). 19. Lectotype AMS No. C-15818; 31.7 mm. 20. Paralectotype AMS; 25.8 mm.

History of the three taxa

Chemnitz (1788) described the species “*Murex fiscellum*” from Pulo Condore, near China, in a non-binomial work which has been suppressed for nomenclatural purposes by the International Commission on Zoological Nomenclature. The German equivalent for the species was “Der Maulkorb” (= the muzzle), indicating a sculptural pattern which is repeated in Chemnitz’s Latin description of “testa angulata, clathrata, fenestrata, crispata”. His original description of the sculpture and colour is as follows:

“ The species has many longitudinal, angulate folds which appear to consist of overlapping, coarse, frilled leaves. Across these folds are positioned yellowish cords which give the shell a fenestrate appearance. In the interspaces of these fenestrations one sees holes and depressions which have a blackish base and giving the shell the appearance of having small windows. The coarse, wrinkled longitudinal folds and yellowish spiral cords are also visible on the upper whorls. The thick outer lip is inside full of small white denticles, and also under the other folds of the surface one sees in the interior traces of small denticles [= immature specimen] which the artist wanted to depict since he drew in the interior of the violet aperture a few whitish denticles, which must not be mistakenly assumed to be the denticles of the inner lip [= columella], which is completely smooth” (Free translation).

Gmelin (1791) validated *Murex fiscellum* in a binomial sense through a brief two line description and citation to the text and figures of Chemnitz’s “*Murex fiscellum*”. Chemnitz’s original description leaves absolutely no doubt whatsoever that his species was the *fiscellum* of authors (= *funiculus* Wood) since the fenestrate sculpture, blackish depressions and yellowish-white colour of the shell are characters incompatible with *Murex margariticola* Broderip. The artist’s rendering of *Murex fiscellum* in figs. 1524 and 1525 of Chemnitz (1788), did not do justice to Chemnitz’s precise description, but has, nevertheless, more features in common with *fiscellum auct.* than with *margariticola* (Figs. 1,2).

That Chemnitz several years later (1795) acted as his own reviser in differentiating between the two similar taxa *fiscellum* and *margariticola* (= *undatus* Chemnitz) has been overlooked by Emerson & D’Attilio (1981). Chemnitz (1795) stressed the following differences in characters in his description:

“This species (= *undatus*) must not be confused nor be considered identical with the South Sea one originating from the Chinese island of Pulo Condore, and which I described in volume 10, figures 1524-1525, because they differ appreciably. This species (= *fiscellum*) is covered with scalloped, granose and frilled folds and encircled by elevated yellowish-white cords and appears through depressions to be clathrate and at the same time to be equipped with windows. Also the greyish-white colouring is totally different and the aperture is violet. The species depicted here (= *M.undatus*) is black and only in the intermediate grooves is a white background colour visible . . .”. (Free translation).

In his subsequent 1795 description Chemnitz made it quite clear that his *M.fiscellum* of 1788 (= *funiculus* Wood) and his *M.undatus* (= *M.margariticola*) are different species, and he stressed the “greyish-white” colour of *fiscellum* which never occurs in *margariticola*. Although *M.undatus* has been validated by Dillwyn (1817) and would have chronological priority over *M.margariticola* Broderip, it is a primary homonym of *M.undatus* Gmelin, 1791, and thus not available.

The next reviser of "*Murex fiscellum*" Chemnitz, was Dillwyn (op.cit.), who discussed and supplied synonymies to most species appearing in the "Neues systematisches Conchylien-Cabinet". He gives an English description of *Murex fiscellum* Chemnitz, cites his original figures, but adds a very important additional reference with the words ". . . and it is well figured in Martyn's "Universal Conchology" but I am unable with sufficient certainty to determine the number of the plate". The figures cited from Martyn (1784-86) are the best reproduction of a fully mature individual of *fiscellum auct.* (= *funiculus* Wood) at the time (Figs. 3,4). Our plate is also unnumbered. Dillwyn was the first author to have clarified the taxon "*fiscellum* Chemnitz". The "first reviser" rule of Article 24 of the Code of ICZN cited by Emerson & D'Attilio (1981) has no bearing on the evaluation of any of the taxa discussed here since they have not been published simultaneously, an action which forms the basis of the "first reviser" rule.

Lamarck (1822) gave a standard 2½ line description and cited only the original reference to Chemnitz (1788) and Gmelin (1791), but the real identity of his species is not known. However, both Blainville (1832) and Kiener (1835-36) were the first authors to misinterpret *M.fiscellum* Gmelin, since they applied the epithet to the species *M.margariticola* Broderip.

Murex funiculus Wood, 1828, and *M.ricinuloides* Quoy & Gaimard, 1833, described from unknown locality and the Tonga Is respectively, are synonyms of *M.fiscellum* Gmelin, and neither name has been applied this century to a valid taxon. The types of both taxa have been lost and only the type-figures are available (Figs. 5,6).

Sowerby (1834) described the new species *Murex iostoma* but Sowerby (1841) and also E.Vokes (1971) re-assigned it to the synonymy of *M.fiscellum* Gmelin. The type is lost but the original type-figure is a good representation of *M.fiscellum* (Fig. 7).

Purpura squamosa Deshayes in Bélanger, 1832, is an earlier name for *Murex margariticola* Broderip, 1833, but fortunately it is a primary homonym of *P.squamosa* Lamarck, 1816. It has been re-named *P.squamulosa* Deshayes in Deshayes & Edwards, 1844, which is once again a homonym of *P.squamulosa* Gray, 1839. The type of this taxon is now lost (Dr P. Bouchet, *in litt.*), and only the type-figure is available (Fig. 17).

Reeve (1845-46) appears to have been confused by the two taxa under discussion. In 1845 he illustrated the typical form of *Murex fiscellum auct.* and of Chemnitz (1788) [Reeve 1845-46, pl.27, fig.124]. This specimen is in the British Museum (Nat.Hist), London, and bears a label which reads: "This without doubt is the true *fiscellum* of Chemnitz according to exact description. The figure is bad." (Figs. 9,10). Reeve further described the angulate form of the species as *Murex decussatus* Reeve, 1845 (non Gmelin, 1791), and also treated *M.margariticola* Broderip, as a separate species. The type of *M.decussatus* is lost and only the type-figure is available (Fig. 8). One year later Reeve (1846) had a change of heart and applied the name "*Ricinula fiscellum* Chemnitz" to the Australian *crassulnata* subspecies of *Murex margariticola* Broderip.

Küster (1859-68) followed Blainville (1832) and Kiener (1835-36) in applying the taxon "*Ricinula fiscellum* Chemnitz" to the species *Murex margariticola*, but Kobelt (1869-70) illustrated "*Murex fiscellum* Chemnitz" which is the *M.fiscellum* Gmelin and of authors, and listed *M.margariticola* as "*M.undatus* Chemnitz".

Other described forms of *Murex fiscellum* are: *Purpura pothuanii* Eydoux & Souleyet in Vaillant, 1852, lectotype (here designated) length 19.6 mm, width 13.0 mm, in the Muséum National d'Histoire Naturelle, Paris (Figs. 13, 14); *P. stellaris* Hombron & Jacquinot in Rousseau, 1853, one immature syntype, length 15.8 mm, in the Muséum National d'Histoire Naturelle, Paris (Figs. 11, 12); *Coralliophila confragosa* H. & A. Adams, 1864, holotype length 30.4 mm in the British Museum (Nat. Hist.), London; *Sistrum triangulatum* Pease, 1868, and *Purpura muricoides* Hombron & Jacquinot in Rousseau, 1853.

E.A. Smith (1879) cited the species "*Sistrum undatum* Chemnitz" with *Murex margariticola* Broderip, in synonymy. He pointed out that the "*Ricinula fiscellum*" Reeve, was not the "*Murex fiscellum* Chemnitz". E.A. Smith (1884) reported a variation of *M. margariticola* from North Australia (subspecies *crassulnata*) and separated this form on the basis of its greater width, fewer and larger nodose plications and its finer and closer transverse squamose ridges.

Tyron (1880) also interpreted "*fiscellum* Chemnitz" as the *fiscellum* auct. and all 7 figures given by Tryon are of this species. He cites "*undata* Chemnitz" as a valid species with *margariticola* in synonymy.

H. Fischer (1901) cited *fiscellum* auct. under the name *Murex ricinuloides* Quoy & Gaimard, but remarked that a careful reading of Chemnitz's text would add weight to the supposition that *M. ricinuloides* Quoy & Gaimard is probably a synonym of "*Ricinula fiscellum* Chemnitz", but that the author's original figure is not precise enough to arrive at this conclusion with any certainty. In a footnote, Fischer (op.cit.) gave references to Chemnitz's volume 10 and 11 for differences between *Murex fiscellum* and *M. undatum*. E. Vokes (1971) also synonymized *M. ricinuloides* with *M. fiscellum*.

Schepman (1911) considered the *fiscellum* of Chemnitz to be the *fiscellum* auct. (= *funiculus* Wood) and warns that it should not be confounded with *Ricinula undata* (= *margariticola*).

Hedley (1915) discussed the problem surrounding "*Murex fiscellum* Chemnitz" and "*M. undatus* Chemnitz" at length and pointed out that the former taxon should be known by the binomial epithet *Murex fiscellum* Gmelin, 1791, and the latter should be replaced with *M. margariticola* Broderip. Hedley (op.cit.) also felt that the North Australian form of *M. margariticola* illustrated and discussed by Reeve (1846), Tryon (1880), E.A. Smith (1884) and some other authors, was sufficiently distinct from *M. margariticola* to warrant the new name *crassulnata*. Dall (1923) overlooked Hedley's new taxon and proposed the substitute name *Morula rhyssa* for Reeve's "*Ricinula fiscellum*".

Conclusion

From the synonymic list it is evident that the great majority of authors interpreted *Murex fiscellum* Gmelin, 1791, as the greyish-white, fenestrate species later named *Murex funiculus* Wood. During the 19th century 7 authors applied the epithet *fiscellum* to the greyish-white *fiscellum* auct. (= *funiculus* Wood), 9 authors proposed new taxa for the latter, 8 authors called the blackish-brown species either *undata* Chemnitz or *margariticola* Broderip and only 4-5 authors erroneously applied the taxon *fiscellum* to the latter species.

During the 20th century 15 authors applied *fiscellum* to the greyish-white *fiscellum* auct. (= *funiculus* Wood), 13 authors cited the blackish-brown species as either *undata* Chemnitz or *margariticola* Broderip, 4 authors proposed new taxa for the latter species and only 3 recent authors (Orr-Maes 1967, Kay 1979 and Emerson & D'Attilio 1981) had a different understanding of the species concept. The cited synonyms are overwhelming evidence that the epithet *fiscellum* Gmelin, 1791, should continue in its accustomed sense which is contrary to the usage suggested by Emerson & D'Attilio (op.cit.).

Authors also disagree on the generic and even familial placement of *fiscellum* Gmelin and *margariticola* Broderip. Kay (op.cit.) assigned *fiscellum* Gmelin (as *funiculus* Wood) to the genus *Muricodrupa* Iredale, 1918, which she placed in the family Muricidae, and also considered Thaididae as a separate family. Emerson & D'Attilio (op.cit.) placed *fiscellum* Gmelin (as *funiculus* Wood) in the genus *Muricodrupa* and the species *margariticola* Broderip (as *fiscellum* Gmelin) they assigned to *Cronia* H. & A. Adams, and both genus-groups were placed in the Thaidinae. The radula of *fiscellum* Gmelin, *margariticola* Broderip, and *fenestrata* Blainville (Fig. 21 — ribbon only 2.1 mm in length in shell 23.0 mm in length, contains 89 rows + 2-3 nascentes) are all of the same type as the radula of *amygdala* Kiener, the type-species of *Cronia*. Shell-characters of the 4 species cited are also generically compatible and in my opinion *Cronia* is the appropriate genus-group applicable to this species-group with *Muricodrupa* for *fiscellum* Gmelin and *fenestrata* Blainville in a subgeneric sense.

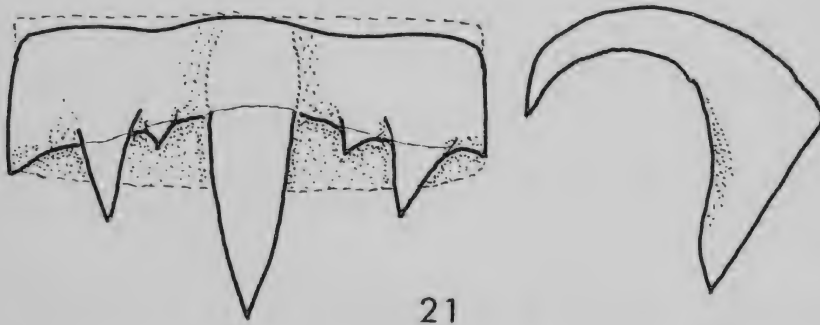


Fig. 21. *Cronia fenestrata* (Blainville) from Makatea, Tahiti, Society Is. Half-row of radula.

Emerson & D'Attilio (op.cit.) synonymized *Cronia crassulnata* (Hedley) with *C. margariticola* (Broderip), but the two forms are so prominently different that a subspecific separation at least is warranted. *C. crassulnata* is consistently broader and more subrhomboidal in shape, the axial ribs are very prominent and few in number (c. 6 in *crassulnata* and 10-13 in *margariticola*), the spiral striae are numerous and almost touching (30-40 in *crassulnata* and 15-20 in *margariticola*) and the spiral cords in *margariticola* are more nodulose and scabrous.

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